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ARMY ENVIRONMENTAL HYGIENE AGENCY ABERDEEN PROVING GR--ETC F/G 6/20
TOPICAL HAZARD EVALUATION PROGRAM OF CANDIDATE INSECT REPELLENT--ETC(U)
APR 81 M H WEEKS, M J TOPPER

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**UNITED STATES ARMY
ENVIRONMENTAL HYGIENE
AGENCY**

ABERDEEN PROVING GROUND, MD 21010

TOPICAL HAZARD EVALUATION PROGRAM
OF CANDIDATE INSECT REPELLENTS

AI3-36340-a, AI3-35941-a, AI3-37418-a, AI3-37331-a

US DEPARTMENT OF AGRICULTURE PROPRIETARY CHEMICALS

STUDY NOS. 75-51-0001-81, 75-51-0006-81, 75-51-0121-81, 75-51-0161-81
SEPTEMBER 1976 - DECEMBER 1980.

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17. ABSTRACT (Continue on reverse side if necessary and identify by block number) Preliminary hazard evaluations of AI3-36340-a, AI3-35941-a, AI3-37418-a, and AI3-37331-a, USDA Proprietary Chemicals, were performed by means of laboratory animal studies using rats, rabbits, and guinea pigs. The technical grade compounds did not cause primary irritation of the skin or eye, and were not photo-irritants. They did not prove to be skin sensitizers or to be acutely toxic by ingestion. It was recommended that the four chemicals be approved for further testing as candidate insect repellents.		

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REPLY TO
ATTENTION OF

HSE-LT-T/WP

DEPARTMENT OF THE ARMY
U. S. ARMY ENVIRONMENTAL HYGIENE AGENCY
ABERDEEN PROVING GROUND, MARYLAND 21010

Mr. Weeks/mhb/AUTOVON
584-3980

15 APR 1981

SUBJECT: Topical Hazard Evaluation Program of Candidate Insect Repellents
AI3-36340-a, AI3-35941-a, AI3-37418-a, AI3-37331-a, US Department
of Agriculture Proprietary Chemicals, Study Nos. 75-51-0001-81,
75-51-0006-81, 75-51-0121-81, 75-51-0161-81, September 1976 -
December 1980

Executive Secretary
Armed Forces Pest Management Board
Forest Glen Section, WRAMC
Washington, DC 20012

A summary of the pertinent findings and recommendations of the inclosed
report follows:

Preliminary hazard evaluations of AI3-36340-a, AI3-35941-a, AI3-37418-a, and
AI3-37331-a, USDA Proprietary Chemicals, were performed by means of
laboratory animal studies using rats, rabbits, and guinea pigs. The
technical grade compounds did not cause primary irritation of the skin or
eye, and were not photo-irritants. They did not prove to be skin sensitizers
or to be acutely toxic by ingestion. It was recommended that the four
chemicals be approved for further testing as candidate insect repellents.

FOR THE COMMANDER:

JOHN F. MAZUR
MAJ, MSC
Director, Laboratory Services

1 Incl
as (5 cy)

CF:
HQDA (DASG-PSP)
Cdr, HSC (HSPA-P)
Dir, Advisory Cen on Tox, NRC
Comdt, AHS (HSA-IPM)
USDA, ARS (Dr. Terrence McGovern)
USDA, ARS-Southern Region



DEPARTMENT OF THE ARMY
U. S. ARMY ENVIRONMENTAL HYGIENE AGENCY
ABERDEEN PROVING GROUND, MARYLAND 21010

REPLY TO
ATTENTION OF

HSE-LT-T/WP

TOPICAL HAZARD EVALUATION PROGRAM
OF CANDIDATE INSECT REPELLENTS
AI3-36340-a, AI3-35941-a, AI3-37418-a, AI3-37331-a
US DEPARTMENT OF AGRICULTURE PROPRIETARY CHEMICALS
STUDY NOS. 75-51-0001-81, 75-51-0006-81, 75-51-0121-81, 75-51-0161-81
SEPTEMBER 1976 - DECEMBER 1980

1. AUTHORITY.

a. Letter, US Department of Agriculture - Agricultural Research Service, Southern Region, Insects Affecting Man Research Laboratory, Gainesville, Florida, 29 September 1976 (AI3-36340-a and AI3-35941-a).

b. Letter, US Department of Agriculture - Agricultural Research Service, Southern Region, Insects Affecting Man Research Laboratory, Gainesville, Florida, 9 August 1978 (AI3-37418-a).

c. Letter, US Department of Agriculture - Agricultural Research Service, Southern Region, Insects Affecting Man Research Laboratory, Gainesville, Florida, 13 October 1978 (AI3-37331-a).

d. Memorandum of Understanding between the US Army Environmental Hygiene Agency; the US Army Health Services Command; the Department of the Army Office of The Surgeon General; the Armed Forces Pest Control Board; and the US Department of Agriculture, Agricultural Research, Science and Education Administration, titled, Coordination of Biological and Toxicological Testing of Pesticides, effective 23 January 1979.

2. REFERENCE. Toxicology Division Procedural Guide, US Army Environmental Hygiene Agency (USAEHA), 1972, revised 1976.

3. PURPOSE. The purpose of this program is to provide guidance for further entomological testing of candidate insect repellents AI3-36340-a, AI3-35941-a, AI3-37418-a, and AI3-37331-a, USDA Proprietary Chemicals.

4. SUMMARY OF FINDINGS. Hazard evaluations of the candidate repellents AI3-36340-a, AI3-35941-a, AI3-37418-a, AI3-37331-a, USDA Proprietary Chemicals, were conducted by this Agency using New Zealand White rabbits for skin and eye studies, Hartley guinea pigs for a skin sensitization study, and Sprague-Dawley rats for determination of acute oral toxicity. A tabular presentation of animal toxicity data developed in this Agency follows:*†

* In conducting the studies described in this report, the investigators adhered to the "Guide for the Care and Use of Laboratory Animals," US Department of Health, Education and Welfare Publication No. (NIH) 74-23, revised 1978.

† The experiments reported herein were performed in animal facilities fully accredited by the American Association for the Accreditation of Laboratory Animal Care.

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Study Nos. 75-51-0001-81, 75-51-0006-81, 75-51-0121-81, 75-51-0161-81,
Sep 76 - Dec 80

TABLE. PRESENTATION OF DATA

Test	Results	Interpretation
<u>SKIN IRRITATION STUDIES</u>		
<u>Rabbits</u>		
Single 24-hour application to intact and abraded skin of New Zealand White rabbits.	A13-36940-a, A13-35941-a, A13-37331-a produced no irritation of the intact skin or of the skin surrounding an abrasion.	USAEHA Category I (ref Appendix A)
0.5 mL of each technical grade compound applied to each of six rabbits.	A13-37418-a produced moderate primary irritation on both intact and abraded skin areas of all rabbits. Detail of results are shown in Appendices B, C, D, & E	USAEHA Category II (ref Appendix A)
<u>EYE IRRITATION STUDIES</u>		
<u>Rabbits</u>		
Single 24-hour application of 0.1 mL technical grade compound to one eye of each of six New Zealand White rabbits.	A13-36340-a caused mild corneal damage and conjunctivitis in all rabbits up to 3 days after application, but appeared normal at 7 days.	USAEHA Category C (ref Appendix A)
	A13-35941-a did not cause irritation to the eyes of rabbits.	USAEHA Category A (ref Appendix A)
	A13-37418-a caused slight transient corneal opacity and conjunctivitis in 2 of 6 rabbits at 24 hours but none at 48 hours.	USAEHA Category A (ref Appendix A)
	A13-37331-a caused very slight transient conjunctivitis in 4 of 6 rabbits at 24 hours but none at 48 hours.	USAEHA Category A (ref Appendix A)
	Results are shown in detail in Appendices F, G, H, and I.	
<u>APPROXIMATE LETHAL DOSE (ALD)</u>		
<u>Oral</u>		
<u>Rats (male) - no diluent</u>		
	A13-36340-a ALD > 6500 mg/kg	Technical grade repellents present no acute lethal hazard from ingestion.
	A13-35941-a ALD - 4300 mg/kg	
	A13-37418-a ALD - 6500 mg/kg	
	A13-37331-a ALD - 4300 mg/kg	

Study Nos. 75-51-0001-81, 75-51-0006-81, 75-51-0121-81, 75-51-0161-81,
Sep 76 - Dec 80

Test	Results	Interpretation
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PHOTOCHEMICAL SKIN IRRITATION STUDIES

Rabbits

A single 0.05 mL application of a 25 percent (w/v) solution of each compound and a 10 percent (w/v) Oil of Bergamot solution (positive control) in 95 percent ethyl alcohol were applied to the intact skin of six rabbits. Five minutes after application, the rabbits were exposed to UV light (365 nm) for 30 minutes at a distance of 10-15 cm.

Alcohol solutions of the four candidate repellents AI3-36340-a, AI3-35941-a, AI3-37418-a, AI3-37331-a caused no photochemical irritation reactions under test conditions. However, ethanol solutions of AI3-37418-a caused irritation on both irradiated and non-irradiated skin sites.

The candidate repellents are not expected to cause a photochemical irritation in humans.

Control

Following UV exposure of the rabbits, 0.05 mL of test compound, positive control and diluent were applied to additional skin areas to serve as unirradiated control sites. Application areas were checked for skin irritation at 24, 48 and 72 hours.

Positive control application and irradiation caused greater irritant effects than in unirradiated skin areas.

Ethanol solutions of AI3-37418-a may cause irritant reactions to sensitive individuals and, when occurring, should be washed off immediately.

Results are shown in detail in Appendices J, K, L and M.

Study Nos. 75-51-0001-81, 75-51-0006-81, 75-51-0121-81, 75-51-0161-81,
Sep 76 - Dec 80

Test	Results	Interpretation
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SENSITIZATION STUDIES

Guinea Pigs (Male)

Intradermal
injections of 0.1 mL
of a 0.1 percent
solution (w/v) of
AI3-36340-a, AI3-35941-a,
AI3-37418-a,
AI3-37331-a or of dini-
trochlorobenzene (DNCB)*
in a mixture containing
1 volume of propylene
glycol and 29 volumes
of saline.

Ten test guinea pigs for
each compound were given
sensitizing doses
over a 3-week period.
After 2 weeks' rest, they
were challenged with ID
injections of each test
compound.

Challenge doses of
AI3-36340-a, AI3-35941-a,
AI3-37418-a, AI3-37331-a
did not produce a sensi-
tization reaction.

AI3-36340-a,
AI3-35941-a, AI3-37418-a,
AI3-37331-a, USDA
Proprietary Chemicals,
did not produce sensi-
tization reactions
under test conditions
and are not expected
to produce sensi-
tization reactions in
man.

Ten positive control
guinea pigs were sen-
sitized over 3 weeks
with DNCB. After 2
weeks rest, they were
challenged with ID in-
jections of DNCB.

Challenge dose of DNCB
in positive control
guinea pigs produced
a marked sensitization
reaction in 10 out
of 10 guinea pigs.

DNCB produced a marked
reaction, indicating the
guinea pigs respond to
strong sensitizing
agents.

Results are shown in
detail in Appendices N,
O, P, and Q.

* A known skin sensitizer

Study Nos. 75-51-0001-81, 75-51-0006-81, 75-51-0121-81, 75-51-0161-81,
Sep 76 - Dec 80

5. CONCLUSION. Technical grade chemicals AI3-36340-a AI3-35941-a, AI3-37418-a, and AI3-37331-a did not cause significant primary skin or eye irritation reactions, no photochemical irritation, no sensitization reactions and do not present an acute ingestion hazard.

6. RECOMMENDATION. Under the provisions of the Memorandum of Understanding (paragraph 1d), it is recommended that AI3-36340-a, AI3-35941-a, AI3-37418-a, and AI3-37331-a, USDA proprietary chemicals, be approved for further testing as candidate insect repellents. Ethanol solutions of AI3-37418-a may cause irritant reactions in sensitive individuals and when occurring should be washed off the skin immediately.



MAURICE H. WEEKS
Chief, Toxicity Evaluation Branch
Toxicology Division



MICHAEL J. TOPPER, DVM
CPT, VC
General Veterinary Officer
Toxicology Division

APPROVED:



ARTHUR H. MCCREESH, Ph.D.
Chief, Toxicology Division

APPENDIX A

TOPICAL HAZARD EVALUATION PROGRAM
DEFINITIONS OF CATEGORIES OF COMPOUNDS BEING
CONSIDERED FOR ACUTE SKIN APPLICATION

CATEGORY I - Compounds producing no primary irritation of the intact skin or no greater than mild primary irritation of the skin surrounding an abrasion. (INTERPRETATION: No restriction for acute application to the human skin.)

CATEGORY II - Compounds producing mild primary irritation of the intact skin and the skin surrounding an abrasion. (INTERPRETATION: Should be used only on human skin found by examination to have no abrasions or may be used as a clothing impregnant.)

CATEGORY III - Compounds producing moderate primary irritation of the intact skin and the skin surrounding an abrasion. (INTERPRETATION: Should not be used directly on the skin without a prophetic patch test having been conducted on humans to determine irritation potential to human skin. May be used without patch testing, with extreme caution, as clothing impregnants. Compound should be resubmitted in the form and at the intended use concentration so that its irritation potential can be reexamined using other test techniques on animals.)

CATEGORY IV - Compounds producing moderate to severe primary irritation of the intact skin and of the skin surrounding an abrasion and, in addition, producing necrosis, vesiculation, and/or eschars. (INTERPRETATION: Should be resubmitted for testing in the form and at the intended use concentration. Upon resubmission, its irritation potential will be reexamined using other test techniques on animals, prior to possible prophetic patch testing in humans, at concentrations which have been shown not to produce primary irritation in animals.)

CATEGORY V - Compounds impossible to classify because of staining of the skin or other masking effects owing to physical properties of the compound. (INTERPRETATION: Not suitable for use on humans.)

EYE CATEGORIES:

A. Compounds noninjurious to the eye. INTERPRETATION: Irritation of human eyes is not expected if the compound should accidentally get into the eyes, provided it is washed out as soon as possible.

B. Compounds producing mild injury to the cornea. INTERPRETATION: Should be used with caution around the eyes.

C. Compounds producing mild injury to the cornea, and in addition some injury to the conjunctiva. INTERPRETATION: Should be used with caution around the eyes and mucosa.

D. Compounds producing moderate injury to the cornea. INTERPRETATION: Should be used with extreme caution around the eyes.

E. Compounds producing moderate injury to the cornea, and in addition producing some injury to the conjunctiva. INTERPRETATION: Should be used with extreme caution around the eyes and mucosa.

F. Compounds producing severe injury to the cornea and to the conjunctiva. INTERPRETATION: Should be used with extreme caution. It is recommended that use be restricted to areas other than the face.

APPENDIX B

COMPOUND: AI3-36340-a		USAEHA STUDY NO. 75-51-0001-81									
PRIMARY SKIN EFFECTS NEW ZEALAND WHITE RABBITS		AEHA TOXICITY CATEGORY		CONDITIONS - Light yellow viscous liquid. Single 24-hour application of 0.5 mL technical grade compound per skin application site.							
Time of Observation (Hours)		Response Rabbit No.						Mean Score	Comments		
		1	2	3	4	5	6				
<u>Erythema & Eschar</u>											
24	Intact Skin		0		0		0	0			
72	Intact Skin		0		0		0	0			
24	Abraded Skin	0		0		2		0.7			
72	Abraded Skin	0		0		0		0			
							Subtotal	0.7			
<u>Edema Formulation</u>											
24	Intact Skin		0		0		0	0			
72	Intact Skin		0		0		0	0			
24	Abraded Skin	0		0		0		0			
72	Abraded Skin	0		0		0		0			
							Subtotal	0			
							Total	0.7			

APPENDIX C

COMPOUND: AI3-35941-a		USAEHA STUDY NO. 75-51-0006-81						
PRIMARY SKIN EFFECTS NEW ZEALAND WHITE RABBITS	AEHA TOXICITY CATEGORY I	CONDITIONS - Clear dark brown liquid. Single 24-hour application of 0.5 mL technical grade compound per skin application site.						
Time of Observation (Hours)	Response Rabbit No.						Mean Score	Comments
	1	2	3	4	5	6		
<u>Erythema & Eschar</u> Intact Skin Intact Skin Abraded Skin Abraded Skin	24	0		0		0	0	
	72	0		0		0	0	
	24		0	0		0	0	
	72		0	0		0	0	
							Subtotal	
							0	
<u>Edema Formulation</u> Intact Skin Intact Skin Abraded Skin Abraded Skin	24	0		0		0	0	
	72	0		0		0	0	
	24		0	0		0	0	
	72		0	0		0	0	
							Subtotal	
							0	
							Total	
							0	

HSE-LT Form 39-2, 1 Jun 80

APPENDIX D

COMPOUND: AI3-37418-a		USAEHA Study No. 75-51-0121-81									
PRIMARY SKIN EFFECTS NEW ZEALAND WHITE RABBITS		USAEHA TOXICITY CATEGORY II		CONDITIONS - clear colorless liquid Single 24-hour application of 0.5 mL technical grade compound per skin application site.							
	Time of Observation (Hours)	Response Rabbit No.						Mean Score	Comments		
		1	2	3	4	5	6				
<u>Erythema & Eschar</u>											
Intact Skin	24	2		2		0		1.3	Skin appeared normal at 7 days.		
Intact Skin	72	3		1		2		2.0			
Abraded Skin	24		2		1		1	1.3			
Abraded Skin	72		2		1		1	1.3			
								5.9			
								Subtotal			
<u>Edema Formulation</u>											
Intact Skin	24	0		1		0		0.3			
Intact Skin	72	2		0		0		0.6			
Abraded Skin	24		0		0		0	0			
Abraded Skin	72		0		0		0	0			
								0.9			
								Subtotal			
								Total			
								6.8			

Study Nos. 75-51-0001-81, 75-51-0006-81, 75-51-0121-81, 75-51-0161-81,
Sep 76 - Dec 80

APPENDIX F

COMPGUND: AI3-36340-a		USAEHA STUDY NO. 75-51-0001-81							
ACUTE EYE EFFECTS NEW ZEALAND WHITE RABBITS		AEHA TOXICITY CATEGORY C	CONDITIONS - Single 24-hour application of 0.1 mL technical grade compound to one eye of each rabbit.						
Time of Reading Hrs-Days	Structure	Scores						Mean Score	Comments
		Rabbit No.							
		1	2	3	4	5	6		
24	cornea iris conjunctivae	1 0 3	1 1 5	1 0 2	1 0 2	1 0 2	1 0 5	1.0 0.2 3.2	
48	cornea iris conjunctivae	1 0 6	1 1 4	1 0 2	1 0 1	1 0 1	1 0 2	1.0 0.2 2.7	
72	cornea iris conjunctivae	1 0 2	1 1 6	1 0 2	1 0 0	1 0 2	1 0 1	1.0 0.2 2.2	
7-days	cornea iris conjunctivae	0 0 0	0 0 0	0 0 0	X X X	0 0 0	0 0 0	0 0 0	

X died, cage trauma, not related to test material.

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Study Nos. 75-51-0001-81, 75-51-0006-81, 75-51-0121-81, 75-51-0161-81,
Sep 76 - Dec 80

APPENDIX G

COMPOUND: AI3-3594]-a		USAEHA STUDY NO. 75-51-0006-81									
ACUTE EYE EFFECTS NEW ZEALAND WHITE RABBITS		AEHA TOXICITY CATEGORY A				CONDITIONS - Single 24-hour application of 0.1 mL technical grade compound to one eye of each rabbit.					
Time of Reading	Hrs-Days	Structure	Scores Rabbit No.						Mean Score	Comments	
			1	2	3	4	5	6			
24		Cornea	0	0	0	0	0	0	0		
		Iris	0	0	0	0	0	0	0		
		Conjunctivae	0	0	0	0	0	0	0		
48		Cornea	0	0	0	0	0	0	0		
		Iris	0	0	0	0	0	0	0		
		Conjunctivae	0	0	0	0	0	0	0		
72		Cornea	0	0	0	0	0	0	0		
		Iris	0	0	0	0	0	0	0		
		Conjunctivae	0	0	0	0	0	0	0		
7-Days		Cornea	0	0	0	0	0	0	0		
		Iris	0	0	0	0	0	0	0		
		Conjunctivae	0	0	0	0	0	0	0		

HSE-LT Form 39-1, 1 Jun 80

APPENDIX H

COMPOUND: A13-37418-a		USAEHA STUDY NO. 75-51-0121-81									
ACUTE EYE EFFECTS NEW ZEALAND WHITE RABBITS		AEHA TOXICITY CATEGORY A						CONDITIONS - Single 24-hour application of 0.1 mL technical grade compound to one eye of each rabbit.			
Time of Reading Hrs-Days	Structure	Scores						Mean Score	Comments		
		Rabbit No.									
		1	2	3	4	5	6				
24	Cornea	0	0	1	0	0	0	0.2			
	Iris	0	0	0	0	0	0	0			
	Conjunctivae	0	0	2	0	0	1	0.5			
48	Cornea	0	0	0	0	0	0	0			
	Iris	0	0	0	0	0	0	0			
	Conjunctivae	0	0	0	0	0	0	0			
72	Cornea	0	0	0	0	0	0	0			
	Iris	0	0	0	0	0	0	0			
	Conjunctivae	0	0	0	0	0	0	0			
7-Days	Cornea	0	0	0	0	0	0	0	..		
	Iris	0	0	0	0	0	0	0			
	Conjunctivae	0	0	0	0	0	0	0			

HSE-LT Form 39-1, 1 Jun 80

APPENDIX J

PHOTOCHEMICAL IRRITATION-NEW ZEALAND WHITE RABBITS

COMPOUND: A13-36340-a		USAEHA STUDY NO. 75-51-0001-81								
COMMENTS: USDA Proprietary Chemical										
PROCEDURE: A single 0.05 mL application of a 25 percent (w/v) solution of test compound and a 10 percent (w/v) oil of Bergamot solution (positive control) in 95 percent ethyl alcohol were applied to the intact skin of six rabbits.										
Observation Time	MEAN SKIN IRRITATION SCORE									
	Test Compound UV Exposure		Test Compound Non-UV Exposure		Positive Control UV Exposure		Positive Control Non-UV Exposure			
	Erythema	Edema	Erythema	Edema	Erythema	Edema	Erythema	Edema		
24 Hours	6	1	6	0	16	18	5	3		
48 Hours	6	0	6	0	15	17	2	2		
72 Hours	6	0	5	0	11	7	0	0		
TOTAL	18	1	17	0	42	42	8	5		
Mean Irritant Responses	6	0.3	5.7	0	14	14	2.3	1.7		
Net Score	0.6		---		24		--			

ACHA Form 62, 1 Feb 81 (HSE-LT)

APPENDIX K

PHOTOCHEMICAL IRRITATION-NEW ZEALAND WHITE RABBITS

COMPOUND: AI3-35941-a		USAEHA STUDY NO. 75-51-0006-81						
COMMENTS: USDA Proprietary Chemical								
PROCEDURE: A single 0.05 mL application of a 25 percent (w/v) solution of test compound and a 10 percent (w/v) oil of Bergamot solution (positive control) in 95 percent ethyl alcohol were applied to the intact skin of six rabbits.								
MEAN SKIN IRRITATION SCORE								
Observation Time	Test Compound UV Exposure		Test Compound Non-UV Exposure		Positive Control UV Exposure		Positive Control Non-UV Exposure	
	Erythema	Edema	Erythema	Edema	Erythema	Edema	Erythema	Edema
24 Hours	0	0	0	0	16	18	5	3
48 Hours	0	0	0	0	15	17	2	2
72 Hours	0	0	0	0	11	7	0	0
TOTAL	0	0	0	0	42	42	7	5
Mean Irritant Responses	0	0			14	14	2.3	1.7
Net Score	0		-		24		-	

APPENDIX L

PHOTOCHEMICAL IRRITATION-NEW ZEALAND WHITE RABBITS

COMPOUND: AI3-37418-a		USAEHA STUDY NO. 75-51-0121-81						
COMMENTS:								
USDA Proprietary Chemical								
PROCEDURE: A single 0.05 mL application of a 25 percent (w/v) solution of test compound and a 10 percent (w/v) Oil of Bergamot solution (positive control) in 95 percent ethyl alcohol were applied to the intact skin of six rabbits.								
	MEAN SKIN IRRITATION SCORE							
Observation Time	Test Compound UV Exposure		Test Compound Non-UV Exposure		Positive Control UV Exposure		Positive Control Non-UV Exposure	
	Erythema	Edema	Erythema	Edema	Erythema	Edema	Erythema	Edema
24 Hours	11	12	10	7	11	8	6	2
48 Hours	12	11	12	7	10	4	1	0
72 Hours	12	10	11	8	11	3	1	0
TOTAL	35	33	33	22	32	15	8	2
Mean Irritant Responses	11.7	11	11	7.3	10.7	5	2.7	.7
Net Score	4.4		-		12.3		-	

ACHA Form 62, 1 Feb 81 (MSF-LT)

APPENDIX M

PHOTOCHEMICAL IRRITATION-NEW ZEALAND WHITE RABBITS

COMPOUND: AI3-37331-a		USAEHA STUDY NO. 75-51-0161-81								
COMMENTS: USDA Proprietary Chemical										
PROCEDURE: A single 0.05 mL application of a 25 percent (w/v) solution of test compound and a 10 percent (w/v) oil of Bergamot solution (positive control) in 95 percent ethyl alcohol were applied to the intact skin of six rabbits.										
	MEAN SKIN IRRITATION SCORE									
Observation Time	Test Compound UV Exposure		Test Compound Non-UV Exposure		Positive Control UV Exposure		Positive Control Non-UV Exposure			
	Erythema	Edema	Erythema	Edema	Erythema	Edema	Erythema	Edema		
24 Hours	12	4	12	1	18	16	10	1		
48 Hours	5	1	2	0	15	14	8	3		
72 Hours	2	1	1	0	12	11	4	2		
TOTAL	19	6	15	1	45	41	22	6		
Mean Irritant Responses	6.3	2.0	5.0	.3	15	13.7	7.3	2.0		
Net Score	3.0		-		19.4		-			

AEHA Form 62, 1 Feb 81 (HSE-LT)

APPENDIX N

COMPOUND: AI3-36340-a									
GUINEA PIG SENSITIZATION MALE HARTLEY STRAIN		<u>Substance:</u> AI3-36340-a <u>Identify:</u> USDA Proprietary Chemical							
Scoring Time 24 hours	Mean Body Wt (G)		Mean Irritation Scores				Comments		
	Initial	Final	Diluent		Test Compound				
Test Compound	339 +50	608 +74	0	0	1.6	0.8	Final Scores >100 - Strong Sensitizing 25-100 - Mild Sensitizing <25 - No Sensitizing		
Test Compound 48 hours	Mean Body Wt (G)		Mean Irritation Scores						
	Initial	Final	Diluent		Test Compound				
Test Compound	--	--	0	0	0	0			

APPENDIX 0

COMPOUND: AI3-35941-a									
GUINEA PIG SENSITIZATION		Substance: AI3-35941-a							
MALE									
HARTLEY STRAIN		Identify: USDA Proprietary Chemical							
Scoring Time 24 hours	Mean Body Wt (G)		Mean Irritation Scores				Comments		
	Initial	Final	Diluent		Test Compound				
			Initial	Final	Initial	Final			
Test Compound	374 +45	607 +93	0	0	0	0.8			
Test Compound 48 hours	Mean Body Wt (G)		Mean Irritation Scores				Final Scores		
	Initial	Final	Diluent		Test Compound		>100 - Strong Sensitizing		
			Initial	Final	Initial	Final	25-100 - Mild Sensitizing		
Test Compound	--	--	0	0	0	0	<25 - No Sensitizing		

APPENDIX P

COMPOUND: AI3-37418-a									
GUINEA PIG SENSITIZATION MALE HARTLEY STRAIN		<u>Substance:</u> AI3-37418-a <u>Identify:</u> USDA Proprietary Chemical <u>Positive Control:</u> DNCB							
Scoring Time 24 hours	Mean Body Wt (G)		Mean Irritation Scores				Comments		
	Initial	Final	Diluent		Test Compound				
Test Compound	405 +26	626 +67	Initial	Final	Initial	Final	Initial	Final	1.6
Positive Control	441 +41	683 +54	0	0	0	0	30	529	
Test Compound 48 hours	Mean Body Wt (G)		Mean Irritation Scores						
	Initial	Final	Diluent		Test Compound				
Test Compound	--	--	Initial	Final	Initial	Final	Initial	Final	0
Positive Control			0	0	0	0	8	209	
Final Scores >100 - Strong Sensitizing 25-100 - Mild Sensitizing <25 - No Sensitizing									

Final Scores
 >100 - Strong Sensitizing
 25-100 - Mild Sensitizing
 <25 - No Sensitizing

APPENDIX Q

COMPOUND: AI3-37331-a									
GUINEA PIG SENSITIZATION MALE HARTLEY STRAIN		Substance: AI3-37331-a		Identify: USDA Proprietary Chemical					
Scoring Time 24 hours	Mean Body Wt (G)		Mean Irritation Scores				Comments		
	Initial	Final	Diluent		Test Compound				
			Initial	Final	Initial	Final			
Test Compound	626 +60	844 +107	0	0	30	69	Compound slightly irritating but not sensitizing.		
Test Compound 48 hours	Mean Body Wt (G)		Mean Irritation Scores				Final Scores		
	Initial	Final	Diluent		Test Compound		>100 - Strong Sensitizing		
			Initial	Final	Initial	Final	25-100 - Mild Sensitizing		
Test Compound	--	--	0	0	14	28	<25 - No Sensitizing		